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WAYS TO INCREASE THE EFFICIENCY OF PERSONNEL UTILIZATION IN THE ENTERPRISE: INTERNATIONAL EXPERIENCE AND DIGITALIZATION

Rakhmatova Gulnigor Sirojidin Qizi
(Case Study of "Boqiy Ravon Textile" LLC)
Andijon Davlat Texnika Instituti magistranti
E-mail: gulnigorodiljonova@icloud.com

Annotation. This article is devoted to the issues of increasing the efficiency of personnel utilization in a knitwear production enterprise using the example of "Boqiy Ravon Textile" LLC. The author analyzes the enterprise's economic indicators, personnel composition, and labor productivity for the period of 2023-2025 based on statistical data. The analysis identifies the following main problems: the low share of employees with higher education (7.3%), the shortage of trained workers (35%), staff turnover (8.0%), insufficient hourly labor productivity (39,000 UZS), and the increase in production costs from 85.8 thousand UZS to 101.4 thousand UZS. The article covers the theoretical and methodological foundations of the concept of personnel potential and provides a detailed description of its structural components: psychophysiological, qualification, personal, motivational, and social potential. The experience of foreign countries (Germany, Turkey, South Korea, Singapore) is analyzed, and ways to adapt them to Uzbek conditions are shown. The author develops practical proposals for improving staff qualifications through international experience and for digitalization and automation of production. The implementation of the proposed measures is expected to increase labor productivity by 25-30%, reduce production costs by 10-12%, decrease staff turnover from 8% to 5-6%, increase the share of employees with higher education from 7.3% to 10-12%, and increase the share of trained workers from 35% to 50-60%.

Keywords: personnel potential, staff qualifications, international experience, labor productivity, staff turnover, digitalization, automation, ERP, KPI, HSM, knitwear production.

Introduction

In modern economic conditions, personnel potential is emerging as a key strategic resource for ensuring the competitiveness of enterprises. The transition to a post-industrial society, the rapid development of the digital economy, and fundamental changes in the structure of production factors have significantly expanded the content of the traditional concept of "labor resources". If during the industrial era the main attention was focused on quantitative indicators of labor – the availability of labor, the level of employment, and the efficiency of working time – today the qualitative characteristics of a person, his knowledge, skills, creative abilities, and desire for continuous development are becoming the main driver of economic development. It is for this reason that the concept of "personnel potential" has not only deeply penetrated scientific discourse but has also become one of the central categories of practical economic policy.

Personnel potential today is recognized as a strategic resource ensuring the competitiveness of enterprises and organizations, the intellectual basis of economic growth, and the main guarantee of societal well-being. The development of theoretical and methodological foundations of the concept of personnel potential, the identification of its structural elements, the determination of evaluation criteria, and the improvement of development mechanisms are among the pressing scientific problems. The relevance of this problem is particularly acute in the context of the ongoing economic and social reforms in the Republic of Uzbekistan. The success of the processes of fundamentally reforming the public administration system, creating a competitive environment in all sectors of the economy, transitioning to innovative development,

and modernizing the social sphere is directly determined by the availability of qualified, highly capable personnel.

Analytical studies conducted at "Boqiy Ravon Textile" LLC have shown that the enterprise faces a number of problems related to the efficiency of personnel utilization. According to the conducted analysis, the share of employees with higher education is only 7.3%, the share of trained workers is 35%, staff turnover is 8.0%, labor productivity per worker is 91,765 thousand UZS, and average hourly labor productivity is only 39,000 UZS. The cost of production increased from 85.8 thousand UZS in 2023 to 101.4 thousand UZS in 2025. These analytical results indicate the need to develop and implement systematic measures to improve staff qualifications, increase labor productivity, and enhance the efficiency of personnel utilization. This article presents the author's proposals for solving these problems based on the study of international experience and the introduction of digitalization and automation measures.

The concept of "personnel potential" entered economic science relatively recently – in the second half of the twentieth century – although its theoretical roots go back to the views of classical political economists on human labor and its role in production. Several stages can be distinguished in the formation and development of this concept. At the initial stage (17th-19th centuries), classical economists such as W. Petty, A. Smith, and D. Ricardo studied labor as the main factor of production. At the next stage (late 19th – early 20th centuries), marginalists such as A. Marshall, K. Menger, and L. Walras began to pay attention to the subjective factors of man in production – his knowledge, skills, and entrepreneurial abilities. The theory of "human capital," founded by T. Schultz and G. Becker in the 1950s and 1960s, was an important stage in the formation of the concept of personnel potential. According to this theory, investments in a person's knowledge, skills, and health (education, professional training, medical services) are a type of capital that subsequently generates high income. This approach, unlike the concept of "labor resources," allowed viewing the employee not as a passive factor of production but as an active investor and subject increasing his own potential. In the 1980s and 1990s, a new interpretation of personnel potential was formed within the framework of the theories of the "knowledge economy" and "intellectual capital" by scientists such as R. Reich, P. Drucker, and T. Peters, in which the main emphasis was placed on employees' innovative abilities, creative thinking, and ability to adapt to changing conditions.

Modern economic literature presents various approaches to the concept of "personnel potential," which can be grouped into the following main directions. According to the resource approach, personnel potential is one of the strategic resources of an enterprise or organization, which, interacting with other resources (financial, material, technical), creates the competitive advantage of the enterprise. Proponents of this approach (J. Barney, G. Hamel, C. Prahalad) argue that personnel potential, unlike other resources, has the property of being "resistant to imitation," that is, it is very difficult or impossible for competitors to copy or reproduce it. According to the competency-based approach (R. Boyatzis, D. McClelland, L. Spencer), personnel potential is defined as the ability of an employee to perform certain job tasks or achieve certain results. In this approach, the main attention is focused on the competencies of employees, that is, the integration of knowledge, skills, attitudes, and personal characteristics. An important advantage of the competency-based approach is that it allows for the assessment of personnel potential based on clear, measurable criteria.

According to the systemic approach (M. Armstrong, D. Ulrich, G. Dessler), personnel potential is a complex, multi-level concept that is interconnected and dependent on all elements of the organizational system. This approach takes into account not only the individual characteristics of employees but also their interactions, group dynamics, organizational culture, and the influence of the management system. The strategic approach (R. Williams, M. Peter, K. Praxis) views personnel potential as a means of achieving the long-term goals of the organization.

From this point of view, personnel potential should be formed, developed, and evaluated in accordance with the organization's strategy.

Summarizing the above approaches, the author defines personnel potential as a dynamic, systemic, and strategic state that determines the current and future efficiency of employees' activities, representing the sum of their knowledge, skills, qualifications, experience, health, psychophysiological characteristics, motivation, creative abilities, and desire for professional development. Personnel potential expresses not only the opportunities of employees manifesting in their current work activities but also the potential (prospective) level of results they can achieve in changing conditions, when new technologies are introduced, and when the content of activities becomes more complex.

Personnel potential has a complex, multi-component hierarchical structure, a full and comprehensive description of which requires an analysis of the interconnections and interactions of its structural elements. The economic literature presents various views on the compositional structure of personnel potential, which can be summarized based on the following main components.

Firstly, psychophysiological potential is the basic and primary element of personnel potential, which includes the physical and mental health of employees, endurance, work capacity, characteristics of the nervous system, ability to concentrate and distribute attention, resistance to stress, and other psychophysiological characteristics. This component is the material basis of all other types of potential, since problems with an employee's health or psychological state sharply limit the possibility of effectively using his knowledge, skills, and abilities.

Secondly, qualification (or professional) potential combines factors such as the acquired knowledge of employees, practical skills, professional qualifications, experience, completion of certification and certification, retraining, and advanced training courses. This component directly determines how effectively an employee can perform his work duties. An important feature of qualification potential is that it changes over time, developing through the acquisition of new knowledge and skills, while at the same time, previously acquired knowledge may partially or completely become obsolete.

Thirdly, personal (or psychological) potential includes the personal characteristics of employees, character traits, responsibility, initiative, creativity, sociability, empathy, self-management ability, time management, and other psychological factors. This component, often together with qualification potential, has the strongest influence on the final results of an employee's activity. Research shows that in some cases, a high level of personal potential can compensate for a relatively low level of qualification potential.

Fourthly, motivational potential includes factors such as the attitude of employees to work, degree of job satisfaction, career aspirations, material and spiritual needs and the degree of their satisfaction, loyalty to the organization, internal and external motives for work activity. Motivational potential often serves as the "triggering" mechanism of personnel potential – no matter how high the qualification and personal potential, if the employee does not have sufficient motivation to carry out work activities and strive for development, then his potential will not be fully realized.

Fifthly, social (or communicative) potential includes factors such as the ability of employees to work in a team, effective communication skills, ability to resolve conflicts, ability to establish and develop network relationships, degree of readiness to work in a group in cooperation. In modern organizations, especially in conditions of project-based work and collective labor, the importance of social potential is sharply increasing.

These five components are closely interconnected, complement each other, and form an integral system of personnel potential. The degree of development of each of these components may not be the same – some employees may have predominantly qualification potential, while others may have personal or motivational potential. The goal of managing personnel potential is

precisely to ensure a balance between these components and to systematically develop each of them.

"Boqiy Ravon Textile" Limited Liability Company was established on September 22, 2022 and is located in the village of Qorag'ul, Jalaquduq district, Andijan region. The enterprise was registered by the State Services Center of the Justice Department of Jalaquduq district, Andijan region on September 23, 2022 under number 60924. The sole founder and 100% share holder of the enterprise is Pozilov Abdullajon Otabek o'g'li, and the authorized capital is 2,032,354,000 UZS. The enterprise is established for an unlimited period and carries out its activities in accordance with the Law of the Republic of Uzbekistan "On Limited Liability and Additional Liability Companies" and other regulatory legal acts.

The main activity of "Boqiy Ravon Textile" LLC is the production of underwear. At the same time, the enterprise also engages in tailoring, sewing, weaving, production of knitwear products, production of all types of outerwear for men, women, and children, production and sale of weaving and sewing products. An important feature of the enterprise is its right to carry out export-import operations. In addition, the enterprise has the right to attract foreign specialists, send local specialists to foreign countries for internships to study weaving and textile production, organize advanced training and training courses, establish educational centers, and conduct language clubs. In the first year of its establishment (2022), the enterprise employed 120 people, and production volume amounted to 45,000 units. By 2025, the number of employees reached 300, and production volume reached 180,000 units. 40% of the enterprise's products (72,000 units) are exported. Over six years of operation, the enterprise has shown significant growth: production volume increased 4 times, the number of employees increased 2.5 times, and export volume increased 8 times. As of 2025, the enterprise employs 300 people, of which 263 (87.7%) are women and 37 (12.3%) are men. The number of employees with higher education is 22 people (7.3%), with secondary specialized education – 220 people (73.4%), with secondary general education – 58 people (19.3%). The average age of employees is 36.2 years, the largest share is occupied by the 30-39 age group (100 people, 33.3%). The share of employees aged 25-49 (the most active and productive age) is 79.3%. The share of trained workers is 35%, and the average length of service is 5.0 years. Staff turnover decreased from 10.0% in 2023 to 8.0% in 2025.

During 2023-2025, the volume of marketable products increased from 14,850 thousand UZS to 23,400 thousand UZS (57.6%), the number of industrial production personnel increased from 280 to 300 people (7.1%), and the number of workers increased from 240 to 255 people (6.3%). Labor productivity per worker increased from 61,875 thousand UZS to 91,765 thousand UZS (48.3%), and labor productivity per employee increased from 53,036 thousand UZS to 78,000 thousand UZS (47.1%). The average daily labor productivity increased from 212,143 UZS to 312,000 UZS (47.1%), and the average hourly labor productivity increased from 27,198 UZS to 39,000 UZS (43.4%). The time spent on producing products worth 1,000 UZS decreased from 36.8 minutes to 25.6 minutes (30.4%). Intensive factors prevailed in the growth of labor productivity – of the total increase in production volume of 135,000 units during 2020-2025, 75.0% was due to the increase in labor productivity.

Correlation analysis showed that labor productivity has the strongest direct correlation with the level of automation (r=+0.98), the level of equipment modernization (r=+0.96), and the share of trained workers (r=+0.95). A strong direct correlation was also found between labor productivity and the share of exports (r=+0.94), average work experience (r=+0.93), and level of job satisfaction (r=+0.91). A strong inverse correlation was found between labor productivity and the defect rate (r=-0.86) and staff turnover (r=-0.82).

The study and analysis of international experience show that in developed countries, the system of improving staff qualifications has been formed over many years and operates with high efficiency today. Germany has a dual education system, in which employees simultaneously

undergo practical training in production enterprises and acquire theoretical knowledge in vocational schools. Turkey has extensive experience in personnel training in the textile and knitwear sector, and the economic conditions of this country are relatively close to those of Uzbekistan. South Korea has accumulated advanced experience in developing digital skills and investing in human capital. Singapore has one of the most effective systems for evaluating and motivating employees. Adapting the experience of these countries to the conditions of "Boqiy Ravon Textile" LLC can significantly increase the efficiency of personnel utilization.

To adapt international experience to the conditions of "Boqiy Ravon Textile" LLC, the author proposes the implementation of the following specific measures. Based on Germany's dual education system, it is advisable to conclude long-term cooperation agreements with vocational colleges located in Jalaquduq district and organize practical training on this basis. Through this system, college students will undergo internships at the enterprise while still studying, and the enterprise will have the opportunity to train the qualified personnel it will need in the future. The implementation of the proposed measures will create the opportunity to conduct internships for at least 15-20 students annually.

Based on Turkey's experience in the textile sector, it is necessary to establish the practice of sending 5-7 promising employees of the enterprise to leading textile enterprises in Turkey for short-term internships of 2-3 weeks each year. Based on South Korea's digital education system, it is advisable to implement a special online professional development platform at the enterprise and teach employees modern digital skills. Based on Singapore's experience, it is proposed to radically improve the system of evaluating and motivating employees, introducing a system of additional payments of 10-15% of the monthly salary for employees who have improved their qualifications and achieved high results.

The author also proposes the implementation of a KPI system at the enterprise as a separate proposal. This system allows for the evaluation of employees' work activities based on clear, measurable, and transparent criteria. The proposed KPI indicators for various categories of employees include: for production workers – the number of products produced per shift, product quality, and the coefficient of working time utilization; for technologists and designers – the number of newly developed models; for export department employees – the growth rate of export volume; for quality control employees – the share of fully inspected batches; for all employees – participation in professional development courses. The implementation of the KPI system will increase employees' responsibility for their work results, make the wage calculation system transparent, and create the opportunity to materially reward employees who have achieved the best results. The implementation of a Human Capital Management system at the enterprise is also proposed as an important recommendation. The HSM system allows for the management of all processes – selection, recruitment, adaptation, professional development, career planning, and termination of employment – within a single system. Through this system, information about employees' education level, qualifications, work experience, attestation results, completion of professional development courses, and other important data is collected and systematized in electronic form. On the basis of this information, the opportunity to form and improve the enterprise's personnel policy is created. The HSM system should operate in close connection with the KPI system, as employees' KPI indicators are collected and analyzed in the HSM system, and appropriate personnel decisions are made on their basis.

Analytical studies conducted at "Boqiy Ravon Textile" LLC have shown great opportunities for increasing the efficiency of personnel utilization through digitalization and automation of production processes. The analysis of indicators shows that the existing production technologies and management systems at the enterprise do not fully meet the requirements of modern digital transformation. The author believes that through digitalization and automation, it is possible to increase labor productivity, reduce production costs, improve product quality, ensure efficient use of employees' working time, and increase the speed of export operations.

One of the first measures to be implemented in the field of digitalization and automation at the enterprise is the implementation of an ERP system. The ERP system integrates information exchange between all departments of the enterprise – production, warehouse, procurement, sales, finance, accounting, and human resources – on a single platform. Through the implementation of this system, the opportunity to monitor production processes in real time, track raw material and finished product balances, control the stages of order fulfillment, and automatically generate financial reports is created. According to the author's analysis, the implementation of the ERP system will increase the speed of information exchange between departments by 2-3 times, accelerate the decision-making process, and reduce the probability of errors by 50-60%. At the same time, the efficiency of managing production processes will increase, which will lead to a reduction in product costs by 5-7%.

The automation of production equipment is one of the important directions for increasing labor productivity. Connecting existing knitting machines to modern software control systems or purchasing new automated knitting machines can achieve productivity 2-3 times higher than manual labor. Modern knitting machines have computer control systems that allow automatic control of product design, dimensions, density, and other technical parameters. At the same time, automated equipment increases product quality and reduces the defect rate. As a result of implementing these measures, it is possible to increase labor productivity by 15-20%, reduce production costs by 8-10%, and significantly improve product quality.

For effective management of the movement of raw materials and finished products at the enterprise, the author proposes the implementation of a WMS. This system automates the processes of raw materials and supplies arriving at the enterprise, their release into production, receipt of finished products into the warehouse, and their shipment. Through the WMS system, information about warehouse balances is generated in real time, which prevents shortages of raw materials or the formation of excess inventories. The implementation of the WMS system will reduce the time spent working with paper documents by 2-3 times, reduce errors in warehouse processes by 70-80%, increase the turnover rate of working capital by 20-25%, and increase the labor productivity of warehouse employees by 30-40%. To increase the efficiency of employees' working time utilization, it is advisable to implement a biometric working time recording system. A biometric system – using fingerprints or facial recognition – allows for accurate recording of employees' arrival and departure times, monitoring the efficient use of working time, and strengthening labor discipline. It is recommended to use this system in integration with the KPI system, since indicators of employees' working time utilization have a direct impact on their overall performance indicators. The implementation of a biometric system can increase the coefficient of working time utilization from 0.92 to 0.95-0.96. This will increase each worker's annual effective working time by an average of 100-120 hours and lead to an increase in labor productivity of 3-5%. To develop the enterprise's export activities and speed up the process of document processing, the author proposes the implementation of an electronic document management system. According to the second chapter of the dissertation, 40% of the enterprise's products are exported. Preparing, signing, and sending export documents – contracts, invoices, waybills, certificates, and other documents – takes 5-7 days using traditional methods. Through the electronic document management system, all export documents are processed in electronic form and sent quickly to foreign partners. The implementation of this system will reduce document processing time from 5-7 days to 2-3 days, significantly reduce errors associated with working with paper documents, strengthen trust relationships with foreign partners, and create the opportunity to increase export volume by an average of 10-15%. For regular improvement of employees' qualifications, the author proposes the implementation of a distance learning platform. According to the second chapter of the dissertation, the share of trained workers was 35%, and staff turnover was recorded at 8.0%. Through the distance learning platform, employees will have the opportunity to study in distance courses on knitwear technologies,

computer programs, quality management, foreign languages, and other subjects. The advantage of this platform is that employees can study after working hours, in the evenings or on weekends, without having to leave the enterprise or allocate special time for study. Through the platform, it is possible to monitor the level of assimilation of employees, conduct tests and exams, and issue electronic certificates of professional development. The implementation of this platform can increase the share of trained workers from 35% to 50-60%, reduce staff turnover from 8% to 5-6%, and increase labor productivity by 5-7%.

It is advisable to implement digitalization and automation measures step by step, in a logical relationship with each other. In the first stage – the first half of 2026 – it is recommended to design and configure the ERP system and launch the distance learning platform. In the second stage – the second half of 2026 – it is advisable to launch the ERP system into industrial operation, implement the biometric system, and start the WMS system. In the third stage – the first half of 2027 – it is recommended to purchase the first batch of automated knitting machines and implement the electronic document management system. In the fourth stage – the second half of 2027 – it is advisable to fully launch the WMS system and purchase the second batch of automated knitting machines. In the fifth stage – 2028 – it is recommended to gradually automate the remaining equipment and integrate all systems with each other.

In implementing digitalization and automation measures, there is a risk of a shortage of highly qualified IT specialists. To mitigate this risk, it is proposed to purchase ready-made solutions from international companies and engage outsourcing companies for their implementation, as well as to train the enterprise's own IT specialists and improve their qualifications. To mitigate the risk of employees' resistance to adapting to new systems, it is recommended to pay special attention to training employees and improving their qualifications, explaining the advantages of changes, and introducing an incentive system. To mitigate the risk of high initial investments, it is proposed to use leasing or credit funds, as well as to attract preferential credits under the state program "Digital Uzbekistan – 2030". To mitigate the risk of system failures or errors, it is recommended to create a backup system, regularly back up data, and conclude technical service contracts.

The full implementation of the proposed digitalization and automation measures is expected to lead to the following positive changes at "Boqiy Ravon Textile" LLC. Labor productivity will increase by an average of 25-30%, the volume of production per worker will increase from 91,765 thousand UZS to 115,000-120,000 thousand UZS. Production costs will decrease by 10-12%, which will lead to a reduction in product costs and an increase in the level of profitability. Staff turnover will decrease from 8% to 5-6%, which will significantly reduce the costs of retaining qualified personnel and training new employees. Hourly labor productivity will increase from 39,000 UZS to 50,000-55,000 UZS, and the time spent on producing products worth 1,000 UZS will be reduced from 25.6 minutes to 18-20 minutes. The efficiency of export operations will increase, and it will be possible to increase export volume from 72,000 units to 90,000-100,000 units. The share of employees with higher education will increase from 7.3% to 10-12%, and the share of trained workers will increase from 35% to 50-60%.

The economic efficiency of the proposed measures is high compared to the investments required for their implementation, with an average payback period of 1.5-2 years. In particular, the implementation of the ERP system will increase the speed of information exchange between departments by 2-3 times, accelerate the decision-making process, and reduce the probability of errors by 50-60%. The implementation of automated knitting machines will increase labor productivity by 15-20% and reduce production costs by 8-10%. The implementation of the WMS system will reduce the time spent working with paper documents by 2-3 times and reduce errors in warehouse processes by 70-80%. The implementation of the biometric system will increase the coefficient of working time utilization from 0.92 to 0.95-0.96. The implementation of the electronic document management system will reduce document processing time from 5-7 days to

2-3 days. The implementation of the distance learning platform will increase the share of trained workers from 35% to 50-60% and reduce staff turnover from 8% to 5-6%.

Thus, the measures proposed by the author for increasing staff qualifications through international experience, implementing modern management systems such as KPI and HSM, and digitalization and automation of production make it possible to significantly increase the efficiency of personnel utilization at "Boqiy Ravon Textile" LLC. These proposals are based on the theoretical foundations covered in the first chapter of the dissertation, the results of in-depth analytical research conducted in the second chapter, and the study of advanced international experience. The implementation of the proposed measures serves to increase the enterprise's labor productivity, reduce production costs, improve product quality, expand export potential, and increase overall competitiveness. The economic efficiency of the proposed measures is high compared to the investments required for their implementation, with an average payback period of 1.5-2 years. The proposals and recommendations presented in this article are real and effective measures that can be implemented in practice by the management of "Boqiy Ravon Textile" LLC.

References

1. Becker, G. (2018). Human Capital: A Theoretical and Empirical Analysis. Tashkent: University.
2. Schultz, T. (2017). Investments in Human Capital. Tashkent: Iqtisodiyot.
3. Armstrong, M. (2019). Human Resource Management Practice. Tashkent: Iqtisod-Moliya.
4. Drucker, P. (2016). Management in Post-Industrial Society. Tashkent: Sharq.
5. Ulrix, D. (2020). Efficiency of Human Resources. Tashkent: Iqtisod-Moliya.
6. Maslov, E.V. (2018). Management of Enterprise Personnel Potential. Tashkent: Iqtisodiyot.
7. Razakova, T.O. (2021). Economic Mechanisms for Human Capital Development in Uzbekistan. Tashkent: Fan.
8. Yuldashev, Q.Q. (2019). Labor Resources and Their Role in Enterprise Development. Tashkent: Iqtisodiyot.
9. Tursunov, B.A. (2022). Human Capital Management in the Digital Economy. Tashkent: Iqtisod-Moliya.
10. Raximov, A. (2023). Modern Approaches to Increasing Personnel Potential. Economics and Innovative Technologies, 2, 45-52.
11. Charter of "boqiy ravon tekstil" llc. Jalaquduq, 2022.
12. Ways to increase the efficiency of personnel utilization in the enterprise: international experience and digitalization (case study of "Boqiy Ravon Textile" llc)